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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,662	10/24/2003	Sung-Su Jung	8734.246.00 - US	6340
30827 7590 05/16/2007 MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER LIN, JAMES	
			ART UNIT 1762	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/691,662	Applicant(s) JUNG, SUNG-SU	
	Examiner Jimmy Lin	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-15 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/14/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. (U.S. Publication 2001/0013920), in view of Komine et al. (U.S. Patent 5,292,368) and Shinoda (JP 2001-235758, as provided by the Applicant).

Hashimoto teaches a method of making a liquid crystal display panel (abstract). A substrate 21a is placed on a table 31, and liquid crystal is injected onto the substrate through a nozzle of a syringe ([0050]; Fig. 14). The syringe can be attached to a robot arm [0153].

Hashimoto does not explicitly teach a plurality of robot arms having syringes and arranging the plurality of robot arms on opposing sides of the table.

Komine teaches a method of applying a coating onto a display device. The coating is applied using a plurality of robot arms arranged on opposing sides of the table (abstract; Figs. 1-2). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a plurality of robot arms having a syringe of Hashimoto attached to each arm and to have arranged the robot arms on opposite sides of the table with a reasonable expectation of success because Komine teaches that it is well known in the art of coating display devices to use a plurality of robot arms arranged on opposing sides of a table.

Hashimoto and Komine do not explicitly teach that at least two robot arms are arranged at each opposing side of the table. However, Shinoda teaches that an LCD substrate can have a plurality of image display parts. Fig. 4 specifically exemplifies four image display parts on a single substrate. One of ordinary skill in the art would have recognized that having more robot

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arms, thereby having more dispensing syringes, would have increased the rate of production. In the case of substrate of Shinoda, having a total of four robot arms (i.e., one for each display part) would have been an obvious modification and to have arranged them on opposite sides of the table would have been obvious over Komine. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a substrate having a plurality of display image parts because Shinoda teaches that such LCD substrates are known in the art. Additionally it would have been obvious to one of ordinary skill in the art at the time of invention to have arranged two robot arms on opposing sides of the table of Hashimoto with a reasonable expectation of success. One would have been motivated to do so in order to have provided a robot arm for each of the image display parts of Shinoda to thereby increase productivity and reduce the overall production costs.

Furthermore, the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (See MPEP 2144.04.VI.B.), thus rendering a plurality of robot arms having syringes as an obvious modification over Hashimoto.

Claim 13: Hashimoto does not explicitly teach that sealant can be dispensed using a syringe. However, Hashimoto teaches that the sealant can be dispensed by any sort of method wherein the sealant is injected on the substrate through a nozzle [0046]. Hashimoto also teaches that the syringe can be used to inject material onto the substrate through the nozzle of the syringe [0050]. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of invention to have used the syringe of Hashimoto to inject the sealant onto the substrate with a reasonable expectation of success because Hashimoto teaches that the nozzle of the syringe is suitable for injecting a material onto an LCD substrate.

Hashimoto, Komine, and Shinoda do not explicitly teach that a plurality of robot arms is arranged on a first and second table. However, the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (See MPEP 2144.04.VI.B.). Therefore, using multiple tables having a plurality of robot arms is an obvious modification over using a single table.

Hashimoto, Komine, and Shinoda do not explicitly teach that a first seal pattern is formed on a first table and a second seal pattern is formed on a second table. However, Shinoda teaches forming seal patterns around the first and second image display parts. One of ordinary skill in the art would have recognized that forming the seal patterns in multiple steps would have achieved similar results as forming the patterns in a single step. Accordingly, forming the seal around the first image display parts in a separate step from forming the seal around the second image display parts would have been an operable equivalent of forming the seals in a single step (i.e., on a single table). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed a plurality of first seal patterns around the first image display parts (i.e., on a first table) separately from forming a plurality of second seal patterns around the second image display parts (i.e., on a second table) because forming the seal patterns in either a single step or multiple steps would have achieved similar results.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto '920 in view of Komine '368 and Shinoda '758, as applied to claim 11 above, and further in view of Hachiman et al. (JP 2001-356353, as provided by the Applicant).

Hashimoto, Komine, and Shinoda do not explicitly teach moving the table along horizontal forward/backward and left/right directions. However, Hachiman teaches a method of depositing materials from a nozzle onto an LCD substrate while moving the table in the XY-direction [0012]-[0014]. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have deposited the materials onto an LCD substrate by moving the table as opposed to moving the nozzle as taught in Hashimoto with a reasonable expectation of success because Hachiman teaches that such a method is operable for depositing material from a nozzle onto an LCD substrate.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto '920 in view of Komine '368 and Shinoda '758, as applied to claim 13 above, and further in view of Yamamoto et al. (JP 61-055625, as provided by the Applicant).

Hashimoto, Komine, and Shinoda are discussed above, but do not explicitly teach that the first plurality of image display parts each have a first size and the second plurality of image display parts each have a second size different from the first size. However, Yamamoto teaches that LCD substrates can have image display parts of different sizes (Figs. 1-2). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have the first plurality of image display parts each having a first size different from a second size of the second plurality of image display parts on the substrate of Hashimoto and Shinoda with a reasonable expectation of success because Yamamoto teaches that such substrates having different sizes of image display parts are suitable in the art of LCDs.

5. Claims 12, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto '920 in view of Komine '368 and Shinoda '758, as applied to claim 13 above, and further in view of Hashimoto et al. (2003/0083203).

Hashimoto '920, Komine, and Shinoda are discussed above, but do not explicitly teach forming a plurality of silver dots at the outer edges of the image display parts using the syringes. However, Hashimoto '203 teaches that conductive fine particles, such as silver, can be dropped onto an LCD substrate from a nozzle [0102]-[0104], wherein the silver is dropped in the form of dots at the outer edges of the image display to prevent breaks and short circuits ([0191]-[0195]; Fig. 8). Hashimoto '920 teaches that materials can be deposited onto an LCD substrate by dropping the material through the nozzle of a syringe. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have connected the upper and lower substrates of Hashimoto '920 using the silver dots of Hashimoto '203 in order to have prevented breaks and short circuits. In addition, it would have been obvious to one of ordinary skill in the art at the time of invention to have dropped the silver dots onto the LCD substrate using the syringe of Hashimoto '920 because Hashimoto '920 teaches that such syringes have nozzles that are suitable for dropping material. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Hashimoto '920, Komine, Shinoda, and Hashimoto '203 do not explicitly teach that the sealant, liquid crystals, and silver dots are formed on separate tables. However, such is obvious for substantially the same reasons as discussed above for claim 13.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 10-12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 16-25 of copending Application No. 10/825,362 in view of Komine '368 and Shinoda '758. Although the conflicting claims are not identical, they are not patentably distinct from each other because the current claims require different combinations and permutations of the claimed features of '362. '362 does not claim at least two robot arms arranged at each opposing side of the table. However, such is obvious over Komine and Shinoda for substantially the same reasons as discussed above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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8. Claims 13-15 and 17 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 16-25 of copending Application No. 10/825,362 in view of Komine '368, Shinoda '758, and Ogino et al. (JP 2001-330840, as provided by the Applicant). '362 does not claim that A) the sealant is applied around the display parts, B) liquid crystal can be dispensed from the nozzles of the syringes, and C) the substrate can be moved to different tables. However, Ogino teaches that A) the sealant can be applied around first and second image display parts (Fig. 6) for an LCD element in order to improve the display quality of the LCD (abstract) and B) liquid crystal can be applied by dripping. The syringe/nozzle setup of '362 is suitable for applying material by dripping onto a substrate. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have dripped liquid crystal onto the LCD substrate of '362 because Ogino teaches that such a method is suitable for applying liquid crystals onto a substrate. In addition, it would have been obvious to one of ordinary skill in the art at the time of invention to have applied the sealant around the first and second image display parts in order to provide a seal around the liquid crystals.

'362 and Ogino does not teach that C) the substrate is transferred to different tables. However, the substrate of '362 must be placed on some sort of table, and the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (See MPEP 2144.04.VI.B.)

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

9. Applicant's arguments filed 3/14/2007 have been fully considered but they are not persuasive.

The Applicant argues that the cited prior art references do not teach "mounting a plurality of syringes, each having a nozzle at one end portion at a plurality of robot arms arranged at opposing sides of a table, at least two robot arms arranged at each opposing side of the table". However, such is obvious over Komine and Shinoda. Additionally, Hashimoto teaches a single

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syringe attached to a single robot arm, and the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (See MPEP 2144.04.VI.B.).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Song (U.S. Patent 6,252,643) teaches connecting upper and lower LCD substrates using silver dots. Hayashi et al. (U.S. Patent 4,869,935) teaches the use of a plurality of robotic arms arranged on opposing sides.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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JL



KEITH HENDRICKS
PRIMARY EXAMINER